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f/100, indicated a magnitude of 0·92. The photographic irradiation at each limb was found to be 0·03 mm. (about 7″).

The Campbell-Stokes sunshine recorder showed practically no trace from $20^h 41^m$ to $20^h 51^m$ (Oxford) and from $20^h 42^m$ to $21^h 4^m$ (Stonyhurst). The fall of temperature (from previous maximum) about greatest phase was 0°·4 F. (Oxford), 1° F. (Stonyhurst); it was noted as being considerably greater in the open air. At Stonyhurst there was no appreciable effect of the eclipse on the magnetic records.

The sky was practically cloudless at all the stations.

Mr. C. Potter observed Baily's Beads from Port Maddy, Benbecula, close to the central line. He used a 2½-inch refractor, and saw the Beads for some seconds before the end of annularity as solid round black globules moving upward along the limb of the sun, apparently raised above the moon's limb. He estimated their apparent diameter as 4″ to 8″, and expressed his opinion that they were not due to the lunar mountains.

Summary of Reports on the Occultation of Venus, 1921 *July* 1.

(*Communicated by the Secretaries.*)

The following list gives the observers and their stations:—

o.	Observer.	Station.	Long. from Greenwich.	North Lat.	Source of Time.	Aperture of Telescope.
			h m s	° ′ ″		in.
1	Sir F. W. Dyson	Greenwich	0 0 0	51 28 38	Greenwich obs.	4
2	A. C. D. Crommelin	,,	,,	,,	,,	6·7
3	C. R. Davidson	,,	,,	,,	,,	12
4	G. Merton	Woldingham	0 0 8·73 W.	51 17 51	Paris Wireless	6
5	W. H. Steavenson	W. Norwood	0 0 16·93 W.	51 26 14	,,	6
6	R. L. Waterfield	,,	,,	,,	,,	2·8
7	E. A. L. Attkins	Squirrel's Heath	0 0 50·4 E.	51 34 53	Hughes & Co., Fenchurch St.	8·5
8	Rev. A. L. Cortie, S.J.	Stonyhurst	0 9 52·68 W.	53 50 40	Paris Wireless	15
9	Rev. J. Rowland, S.J.	,,	,,	,,	,,	,,
0	E. H. Collinson	York	0 4 18 W.*	53 57*	Not stated*	4½

The asterisk indicates that great precision is not claimed for the corresponding data.

Observer 7 noted that his watch was 15^s slow July $0^d\ 23^h$, and 18^s slow July $1^d\ 23^h$: his times appear to require a correction of -2^s or -3^s.

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Observed Times of Phases (G.M.T.).

Obs.	Disappearance.			Reappearance.	
	S. Cusp.	N. Cusp.	2L.	N. Cusp.	2L.
	h m s	s	s	h m s	s
1	16 2 ...	...	79·63	... ...	...
2	16 2 (44·32)	55·31	78·74	17 9 ...	28·53
3	16 2 51·36	55·35	77·78	... ...	...
4	16 2 32	...	57·3	... ...	...
5	16 2 ...	...	72·9	17 9 ...	20·0
6	16 2 ...	...	72·9	17 9 ...	18·0
7	16 3 (15)	...	35	17 9 28(*a*)	53(*a*)
8, 9	16 7 3·6	11·1	34·5	17 11 ...	25·1
10	16 7 42	...	78	17 12 ...	42

Times reduced to Greenwich Observatory.

Obs.	S. Cusp.	N. Cusp.	2L.	N. Cusp.	2L.
4	16 2 53	...	78·3	... ...	...
5, 6	16 2 ...	...	78·4	17 9 ...	24·6
7	16 2 (60)	...	80	17 9 8	33

The times in brackets are presumably erroneous. Those marked (*a*) were noted by the observer as being probably 1 or 2 seconds late. This correction has not been applied above.

In reducing the times of the observers near London to what they would have been if made at Greenwich, the following data have been used, derived from *Circulaire de l'Observatoire de Cracovie*, No. 10:

Moving 1′ North makes Dis. $1^{\mathrm{s}}{\cdot}90$ later, Re. $1^{\mathrm{s}}{\cdot}67$ later.
,, 10^{s} East ,, ,, $0^{\mathrm{s}}{\cdot}57$ later, ,, $1^{\mathrm{s}}{\cdot}85$ later.

The calculated interval for Greenwich between the disappearance of S. cusp and 2L is $25^{\mathrm{s}}{\cdot}93$; that between N. cusp and 2L is 21·37. Hence, collecting the observations of observers 1 to 6, and reducing to Greenwich and to 2L, we obtain:

Observer.	Time.	Object.
	h m s	
1	16 3 19·63	2L.
2	16·67	N.C.
,,	18·74	2L.
3	17·29	S.C
,,	16·72	N.C.
,,	17·78	2L.
4	18·9	S.C.
,,	18·3	2L.
5, 6	18·4	2L.
Weighted mean . .	16 3 18·23	(giving double weight to obs. of 2L).

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The adopted time of reappearance of 2L at Greenwich is $17^h\ 9^m\ 28^s{\cdot}53$. At Stonyhurst the calculated intervals from disappearance of cusps to that of 2L are $28^s{\cdot}85$ S., $19^s{\cdot}45$ N.

The adopted times of disappearance and reappearance of 2L are $16^h\ 7^m\ 34^s{\cdot}0$, $17^h\ 11^m\ 25^s{\cdot}1$.

The following equations have been computed, using these adopted times. The *Nautical Almanac* R.A.'s of the moon and Venus are assumed to require corrections of $+x''$, $+e''$; the N.P.D.'s of $+y''$, $+f''$, the time of $+t^s$; the excesses of the tabular parallax and semidiameter of the moon over those of Venus are assumed to require multiplication by the factors $1+\frac{m}{1000}$, $1+\frac{n}{1000}$.

$$\begin{array}{llrlllll}
\text{Dis. Gr.} & & -14''{\cdot}95 = & +{\cdot}884(e-x) & -{\cdot}389(f-y) & -{\cdot}496\,t & -\ {\cdot}968\,m & -{\cdot}958\,n \\
\text{,,} & \text{St.} & -13{\cdot}88 = & +{\cdot}843\ \ \text{,,} & -{\cdot}478\ \ \text{,,} & -{\cdot}491\ \text{,,} & -\ {\cdot}529\ \text{,,} & -{\cdot}958\ \text{,,} \\
\text{Re. Gr.} & & +14{\cdot}36 = & -{\cdot}951\ \ \text{,,} & +{\cdot}135\ \ \text{,,} & +{\cdot}457\ \text{,,} & +1{\cdot}476\ \text{,,} & -{\cdot}959\ \text{,,} \\
\text{,,} & \text{St.} & +16{\cdot}03 = & -{\cdot}959\ \ \text{,,} & +{\cdot}011\ \ \text{,,} & +{\cdot}468\ \text{,,} & +1{\cdot}718\ \text{,,} & -{\cdot}959\ \text{,,}
\end{array}$$

An approximate solution, neglecting t, m, n, gives

$$(x-e) = +15''{\cdot}6, \quad (y-f) = -2''{\cdot}5:$$

the first is much better determined than the second.

Observers 3 and 10 both obtained photographs in broad daylight, some minutes before disappearance, on which the moon and Venus are distinctly visible.

Observers 8, 9 noted that at disappearance the S. cusp appeared brighter and sharper than the N. cusp. 7 contrasted the whiteness of Venus with the yellowness of the moon. 5 noted that some two seconds before the disappearance of Venus 2L the segment of the planet appeared greenish-blue and thickened at its ends (probably owing to diffraction). 10 noted the appearance of a dark shading inside the moon's limb, roughly making a circle when combined with the visible portion of the planet.

Occultations observed during the Lunar Eclipse of 1921 *October* 16.

At the lunar eclipse in 1921 October 16 the following occultations were observed at the Royal Observatory, Edinburgh (lat. 55° 55′ 30″·0, long. $12^m\ 44^s{\cdot}2$ west), by Professor Sampson (24-inch reflector) and Mr. R. W. Wrigley (15-inch refractor):—

Star.	Disapp.	Observer.	Reapp.	Observer.
B.D. 7°·218	10 15 21·9	R.A.S.		
224	10 18 8·4	R.A.S.	11 28 36·9	R.A.S.
	18 8·4	R.W.W.		
225	10 29 5·4	R.W.W.		
228	10 55 10·9	R.W.W.		
227	11 11 22·7	R.A.S.		
	11 11 22·4	R.W.W.		